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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/725,057	12/02/2003	J. Edward Cichanowicz	023407-00001	2939

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ARENT FOX PLLC  
1050 CONNECTICUT AVENUE, N.W.  
SUITE 400  
WASHINGTON, DC 20036

EXAMINER

JOHNSON, EDWARD M

ART UNIT PAPER NUMBER

1754

DATE MAILED: 01/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/725,057

Applicant(s)

CICHANOWICZ, J. EDWARD

Examiner

Edward M. Johnson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 04 October 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) 1-14 and 23-25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 15, 16 and 18-22 is/are rejected.
- 7) ☒ Claim(s) 17 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 10/05.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 15, 20, and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Hums US 4,880,378.

Regarding claim 15, Hums '378 discloses a method for NOx reduction in flue gas comprising injecting reducing agent, passing through a catalyst downstream of the injection, then passing through a heat exchanger, then passing through a second catalyst (see column 5, lines 9-43).

Regarding claim 20, Hums '378 discloses admixing with an ammonia injecting device (see column 6, lines 9-10).

Regarding claim 22, Hums '378 discloses additional injection of fresh air to oxidize all hydrogen formed into water and release sufficient heat of the catalyst (see column 5, lines 28-33).

***Claim Rejections - 35 USC § 103***

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3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 16 and 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hums '378.

Regarding claim 16, Hums fails to disclose a mixing body that lowers temperature to lower the standard deviation.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a heat exchanger that lowers temperature to lower the standard deviation of the ammonia/NO ratio because Hums discloses cooling of the flue gas desulfurization to leave a temperature of about 65 degrees C (see column 5, lines 5-8), which process achieves the special advantage of not needing cleansing in the conduit (see column 5, lines 14-17).

Regarding claims 18-19, it would have been obvious to use a ratio of about 1:1 to minimize excess unreacted NO and ammonia passing through the system.

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5. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hums '378 as applied to claim 15 above, and further in view of Moller et al. US 4,889,698.

Regarding claim 21, Hums fails to disclose an additional layer of special-purpose catalyst for oxidation of mercury.

Moller '698 discloses contacting with activated carbon to remove mercury.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the activated carbon mercury removal of Moller in the flue gas NOx reduction process of Hums because Moller discloses the activated carbon mercury removal in a process for cleaning flue gases to obtain an improved removal of nitrogen oxides (see abstract).

***Allowable Subject Matter***

6. Claim 17 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter: It would not have been obvious to one of ordinary skill in the art at the time the invention was made to transfer 50-175 degrees F of heat with a one-piece heat exchange element in a Ljungstrom-type heat exchanger, wherein

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sulfates and bisulfates are cleaned from the air heater surfaces with the sootblowers in the method for the selective catalytic reduction of nitrogen oxides of the instant claim 22.

### **Conclusion**

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Frey et al. US 6,117,405 discloses a process for removing NOx from flue gases comprising injecting ammonia reducing agent, heat exchange, and contact with activated carbon to remove mercury (see abstract and column 3, lines 30-33).

9. Applicant's submission of an information disclosure statement under 37 CFR 1.97(c) with the fee set forth in 37 CFR 1.17(p) on 10/4/05 prompted the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 609.04(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edward M. Johnson whose telephone number is 571-272-1352. The examiner can normally be reached on M-F 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley S. Silverman can be reached on 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

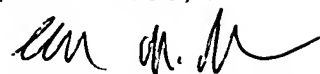
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic

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Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'EMJ', with a stylized flourish extending to the right.

Edward M. Johnson  
Primary Examiner  
Art Unit 1754

EMJ